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SPECIFICATION

SEMICONDUCTOR DEVICE AND PROCESS FOR PRODUCING THE SAME

This application is a divisional of U.S. Appl.
now Patent No. 6,750,563
Serial No. 09/829,969, filed April 11, 2001, and the entire
5 disclosure of which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

The present invention relates to a semiconductor
device and a process for producing the same and, more
particularly, to a semiconductor device with an MIS type
10 transistor and a process for producing the same.

To attain higher performance and higher integration
of devices, semiconductor devices have been progressively
scaled down over the years, necessitating incorporation of
low-resistance materials into the electrode materials. It is
15 thus desirable to incorporate a metal also into the MOS
transistor gate electrode.

In the case of high-speed CMOS devices, on the
other hand, low threshold voltage and low gate resistance
alone are not enough to attain both higher performance and
20 higher integration. It is also required to reduce the
gate/contact pitch. Conventional technologies of satisfying
these requirements include a SALICIDE technology of self-
aligned silicidation of gate polycrystalline silicon and
source/drain regions, a technology using POLICIDE structure,
25 i.e. using a gate of polycrystalline silicon/silicide-stacked
structure, a technology using a gate electrode of